

# FORTUNES MAY BE MADE OUT OF BANKS OF BLACK SAND

Recent Discoveries of the Geological Survey Will Add Millions to Our Wealth.

## THE HUNT FOR PLATINUM

How the Japanese-Russian War Started This—Placer Gold Going to Waste.

By Frank G. Carpenter.

(Special Correspondence of The Times-Dispatch.)

WASHINGTON, D. C., Within the past year experiments have been made which will revolutionize placer mining all over the world, and add millions to the wealth of the United States. They may build up a manufacturing industry on our Pacific slope, add population to the North-west which are now as wild as any part of the Rockies. Based upon them, syndicates are already forming and they will give small or large fortunes to a great number of people. I refer to the experiments which, at the direction of Congress, the Geological Survey, has made and is making as to the minerals found in black sand.

### Fortunes in Black Sand.

Every miner knows what black sand is. It is the heavier particles which come from the wearing away of rocks containing certain minerals. All sand comes from rock and the greater part of it from quartz. The quartz sands are white or light brown in color. They are found on our Atlantic shores, and are scattered here and there all over the country. There are many of them in the west, but there, mixed with them and often in great beds apart from them, are found deposits of black sand. There is so much of this black stuff along the Pacific coast that the seashore is dark, and not white when viewed from the ocean. This is the case from Cape Flattery on Puget Sound down to San Diego. As one comes closer shore he often sees great masses of black rocks and headlands, the latter made up of layers of black and white sand, one running through the other somewhat like marble cake. Those headlands sometimes result from the dropping of the shore, through an earthquake somewhat like that of San Francisco.

This black sand is also found along the big western rivers. The Columbia has many such deposits, and the Snake River is especially rich. Black sand is to be found in every mineral region, and it is more or less connected with the placer mine. When Dr. Day first began to investigate the subject, he sent out letters to eight thousand placer miners scattered all over the United States, and asked each to send him a little bag of this black sand with which he was working. More than ten thousand of the miners responded, and the samples came from thirty-five different States and Territories, including the Appalachians and the Rockies and all parts of the Pacific coast, even to Alaska. The samples were analyzed and assayed for the gold and platinum they contained, and also for the numerous other minerals in them which our scientists thought might be of industrial value. As a result of the assays and the experiments made in the reduction of these sands at the Portland Exposition, it is known that they can be made of enormous value to the country, and that they may bring in millions of dollars of a product every year.

### David Day vs. King Saul.

"I am like Saul, the son of Kish. I started out to hunt my father's asses and lo! I found a kingdom." Dr. David T. Day, the chief of the mining and mineral resources division of our geological survey, might well have made the above remark as to his work in the black sands, although he did not. I called upon him at the Bureau the other day and had a long chat with him about his experiments. He has been chief investigator of the black sand minerals and the principal discoveries are due to him.

Dr. Day is one of our best known geologists. He has been connected with the survey for almost a quarter of a century, and has been in charge of the government mining exhibits at our national expositions from the world's fair at Chicago, to Portland. It was at Portland last year that the most important of the black sand experiments were made. In my talk with Dr. Day I asked him how the investigation originated. He told me it was through a search for platinum, a metal which I have referred to above as Saul's father's asses, and in the hunt for which he discovered vast quantities of magnetic iron, chrome iron, silicon and rare minerals valuable in the arts. Chromium is used in the manufacture of plants, chrome steel and bichromate of potash. Silicon is valuable in making incandescent gas and electric lights, and monazite and other metals for the same purpose. In addition to them Dr. Day found titanium and other things, of which I write further on.

### The Hunt for Platinum.

The beginning of the hunt was for platinum, and it was the direct outcome of the Japanese-Russian War. The chief platinum mines now known to the world are in the Ural mountains on the borders of Siberia. It is from there that the most of the world's supply comes, and the supply is controlled by a trust which finances our American banks with platinum at its own price. When the war broke out our manufacturers were greatly alarmed, and they sent in petitions to Congress to have the geological



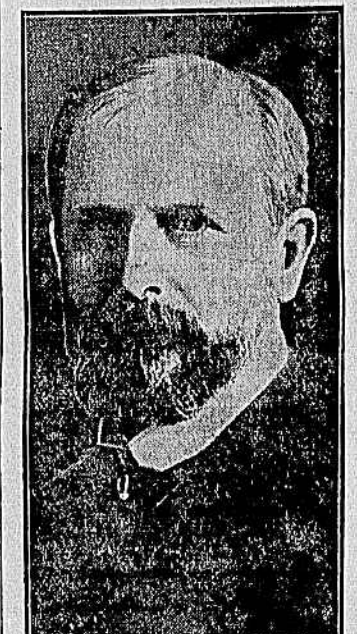
WORKING AT THE FURNACE.

survey look up platinum in the United States. It was known that the metal existed in small quantities in many localities, and the object of the petition was to have America furnish its own supply of this metal and thus keep the trust. The geological survey asked for an appropriation, and got it, but they worried their request so that the work covered all the metals in the black sand.

### Worth More Than Gold.

The results of the investigations have shown that we shall supply a large part of our own platinum, and that our miners in some localities will make a great deal from this metal in addition to the gold which is almost always found in connection with it. Platinum is a silvery white metal as hard as iron and very malleable. It is, with one exception, the heaviest metal in nature, and still it is so ductile and workable that wires have been made of it which are one-twelve-hundredths of an inch in diameter.

This metal is of great value in the arts. It will not amalgamate with quicksilver, and it is about the only metal which can be used in carrying the electric current through the glass of the incandescent lamp. Every electric globe or bulb has two fine platinum wires running through the glass by which the electricity goes to the filament within. It is used in all kinds of electrical machinery. It is also used in dentistry, especially for the pins which attach a



DR. DAVID DAY, the black sand expert.

brand new porcelain teeth to an old snag of a root.

Platinum is used in laboratories for crucibles and other utensils, as it is not attacked by acids, and it is also alloyed with many other metals for various purposes. It has at times been used in Russia for the coinage of high values of money, and, indeed, it is almost always now bringing upward of \$20 per ounce.

A Treasure in Pop Bottles. Dr. Day tells me that there is a regular search going on along the coast of Oregon for a hidden treasure of platinum, somewhat the same as the hunt for Captain Kidd's pirate hoard off the coast of the Atlantic. As the story goes, this treasure is contained in six pop or ginger beer bottles, which have been filled with platinum and tightly corked. They were buried in the sands, and there are various traditions as to where they are hidden. A bottle the size of the ordinary cigar filled with platinum is worth at least \$100, and those six bottles contain about \$10,000 worth of this most precious of the white metals. Just where they lie no one has yet been able to ascertain, and the hunt goes on.

The average placer miner of the west has long known of the existence of platinum in black sand, but he has never

made much effort to save it. This has been owing to the ignorance regarding the metal and its value, and also to some unsuccessful attempts to dispose of it. Not long ago a miner from Oregon sent to the coast three skins of the sea otter and twenty-five pounds of platinum. He got something like \$1,000 a skin for the otters, but only realized \$1 a pound for the platinum. How he was defrauded of his platinum should have brought him about \$2,000.

### Platinum and Gold.

By the use of the separating tables employed by Dr. Day for getting the metals from the black sand, the grains of platinum and gold are taken out at a cost of a few cents per ton. The platinum, which was formerly gone to waste can now be saved, and it will form an important by-product of most placer mines. When found in connection with gold, it remains in the sluices with the gold, and other heavy materials. In panning, it is known by its great weight, its white color, and its resistance to nitric acid. In general the platinum grains are smaller than gold grains and large nuggets are rare.

To be used for saving the ore will result in an enormous increase of gold from certain of our placer mines. So far the most of the gold saved has been by means of mercury in sluice boxes. The dirt containing the gold has been washed into these boxes and saved with quicksilver. A great deal of the gold, however, our geologists now find, has never been touched by the quicksilver. It has been coated with copper or other metals which resist the action of mercury and has been thrown away as waste.

### Saved 73 Cents; Lost \$9.

Dr. Day showed me a little bottle containing what looked like grains and scraps of copper which he told me were grains of almost pure gold. Said he: "The man who owned the mine from which this gold was taken was saving 73 cents for every ton of dirt washed, which he was throwing away \$9 worth of gold as refuse copper. When specimens of the waste were sent to me I thought they were copper. I tested them with nitric acid, with no result. I then treated them with hydrochloric acid, and they began to look a little more like gold, and when I showed them to my assistant, he said at once that they were gold, and he took them and melted them down into a gold button, which was worth \$9 an ounce."

"There is a great deal of gold in the black sand that has never been gotten out," continued Dr. Day, "and there is much black sand, containing quantities of gold, which has not been worked because the proportion of sand was so great that it was hard to handle, and the miners preferred to go to other places, where the sand was less in quantity, even though it contained less gold. By running the black sand over the Willey, Plunder and other tables we find that we can save from 85 to 98 per cent. of the gold and platinum, and at the same time separate the other metals, so that they can be reduced."

### An Iron Nugget as Big as Lake Superior.

"The gold and platinum are by no means the only values in the black sand," continued Dr. Day. "There are also metals of industrial worth containing enormous possibilities. A great part of the sand is made up of magnetic iron, which, by a little electric furnace made last year, we are able to turn into excellent steel."

All along the Pacific coast from Puget Sound to the southern end of California this black sand exists in great quantities. It lies in deposits back from the coast, on ledges and headlands, and is washed up by the sea at every high tide, being rolled over and over and thrown out upon the beach. In that sand, if it were separated from the other minerals, there is enough iron to fill Lake Superior and make it solid iron ore. This is on the estimate of working sands that contain only ten per cent. of magnetic iron, and some contain far more. Suppose we had five hundred furnaces situated along the coast, and that each should handle but one hundred tons of ore a day. Altogether they would handle fifty thousand tons per day, and at three hundred days (no one has an annual output of fifteen million tons, or about one-third as much as the iron product of the whole United States. That would make the Pacific slope one of the great industrial centers of our country, and also the workshop for China, Japan and the remainder of the Orient. Indeed the steel tracks for China's new railroads may yet come from the black sands of the Pacific."

### Smelting by Electricity.

Dr. Day tells me that these iron sands can be turned into steel by means of electricity at a lower cost than ordinary iron can be smelted with coal. Only a very small amount of coke is needed, and the electricity does the work at fifty cents less per ton. This is very important to the Pacific coast, as it is now producing some of the cheapest electricity known to the world. It furnishes it in many places at lower rates than at Niagara, and at as low as seven or eight dollars per horsepower per year. This means that the Pacific slope, with the many streams running down its mountain sides, is just as well off as though it had vast deposits of smelting coal, and that electricity is making the iron used by the West in the future.

### Uncle Sam's Little Furnace at Portland.

During the Portland Exposition Uncle Sam, at the instance of Dr. Day, set up a little furnace there to experiment on these sands. The Canadian government had sent a commission to Europe to report on what is going on there in the reduction of iron by electricity, and it was on the basis of that report that the furnace was made. The man who did the

work was an expert named Wilson, of the Wilson Aluminum Company, which has taken out patents for certain electric furnaces. Mr. Wilson arrived in Portland last October, and at the end of one week he had made a furnace and was producing steel from these sands. His furnace turned out good steel in fifty pounds the day it began to work, and it had a capacity of a half-ton of steel. It was, of course, small and experimental, but it worked right along without a hitch. It was run for a month for one thousand dollars, and this included the original cost of construction and all labor and cost of operation during that time. To show how quickly it could be worked, Dr. Day and a party started at 2:30 one afternoon, with everything cold, and within less than three hours they had made a number of a ton of steel. The sand used for making that steel was from near brought from Monterey Bay, just below San Francisco.

The sand was taken from the bags, run over the magnets to get rid of the gold and other minerals, then dried, and the magnetic iron in it taken out and run into steel. At the same time the gold in the sand was melted into a button, and all was done before 5 P. M. All electrical furnaces were established on Monterey Bay they might now be furnishing the steel for the rebuilding of San Francisco.

Dr. Day tells me that Uncle Sam's little furnace could be run at a profit for smelting certain kinds of steel, and that for five thousand dollars two furnaces could be put up, one for smelting and the other for refining, which would make money right along, day in and day out.

### Opportunities for Farmers and Miners.

These new discoveries as to separation and saving of the metals in the black sand will result in the building up of a part of Oregon which is now so wild that one can buy a bear skin there for fifty cents or a dollar. This is what Dr. Day tells me he could do for skins in these regions. Much of the land is good for farming, but now inaccessible by railroad. Some of it lies along the beach and some on the rivers where there is black sand. In the future the farmers may own their own concentrated land, which they can use for the separation of the metals. They can pile up their iron ore, and in time it will be taken out by the railroads. For a thousand dollars a mining proposition of this kind can be established.

FRANK G. CARPENTER.

### The Best English.

Where is the best English spoken? The question has been addressed to a contemporary by an American who wishes his little daughter to get the best accent that is put in the market. One would be puzzled to name the town or city where the best English is spoken. In Germany this is German. In France this is French. In Spain this is Spanish. In the United States this is American. But who shall fix upon the English language? It is not London, whose distinctive accent is as horrible in English as that of Berlin is in German. It is certainly not Cardiff, whence comes one of the candidates for the American father's dollars.

Were this writer faced with the problem of bringing up a girl in the way she should go, he would go beyond England for the governess who should instruct English speech. He would pass by the raucous voices of Kent, the gibberish of London, the long-drawn vowels of the Midlands, all the horrors of speech that assail one in the potteries, in Lancashire, in Glasgow, until the Western Highlands are reached. In those highland glens speech is music, gentle, simple, without dialect or offensive accent, the English as which our Bible was written.—London Chronicle.

**Lady Curzon's Death.** Death has bereft America no less than Great Britain in the taking away of Lady Curzon. The elevation of our young American kinwoman to the peerage, the vice-regal dignity of British India was a mere incident, and a minor one, in a life of singular sweetness. As Mary, in a life of singular sweetness, as Mary, the departed was beloved by all who knew her, and her even temper and kindness of disposition made her for her many friends in the land of her adoption as she left at home. Peace be with her.—Philadelphia Record.

Silence: "Jones is pretty well off, isn't he?" Cynthia: "Yes, but he doesn't know it." Bill: "What do you mean?" Cynthia: "He's going to get married."

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